

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method of identifying bacteria, comprising:

- a) providing:
 - i) amplified random genomic sequences from a plurality of bacterial species, wherein said amplified genomic sequences range between 1 – 2 kb and are arrayed on a solid support so as to create a plurality of arrayed elements,
 - ii) labeled target DNA from a test bacteria of interest, wherein said labeled target DNA is labeled with a first fluorescent dye and
 - iii) labeled reference DNA from at least four strains of reference bacteria, wherein said reference bacteria are members of the group consisting of said plurality of bacterial species, wherein said labeled reference DNA is labeled with a second fluorescent dye; and,
- b) hybridizing said target DNA and said reference DNA on said plurality of arrayed elements, wherein each hybridized target DNA has a fluorescent target signal, and each hybridized reference DNA has a fluorescent reference signal; and
- e) ~~calculating a ratio of said fluorescent target signal to said fluorescent reference signal at each array element thereby determining the species of said test bacteria.~~

2. (Original) The method of claim 1, wherein said test bacteria are from a sample obtained from a subject.

3. (Previously Presented) The method of claim 1, wherein said test bacteria are pathogenic.

4. (Original) The method of claim 1, wherein said test bacteria are environmental isolates.

5. (Original) The method of claim 1, wherein said solid support is a microchip.

6. (Currently Amended) The method of claim 26 [[1]], wherein said calculating comprises statistical analysis.

7. (Canceled)

8. (Original) The method of claim 1, further comprising the step of producing hybridization profiles of said test and reference bacteria.

9. (Currently Amended) A method of identifying bacteria, comprising:

- a) providing:
 - i) amplified random genomic sequences from a plurality of bacterial species, wherein said amplified genomic sequences range between 1 – 2 kb and are arrayed on at least one microchip, so as to create a plurality of arrayed elements,
 - ii) labeled target DNA from a test bacteria of interest, wherein said labeled target DNA is labeled with a first fluorescent dye and
 - iii) labeled reference DNA from at least four strains of reference bacteria, wherein said reference bacteria are members of the group consisting of said plurality of bacterial species, wherein said labeled target DNA is labeled with a second fluorescent dye; and,
- b) hybridizing said target DNA and said reference DNA on said plurality of arrayed elements, wherein each hybridized target DNA has a fluorescent target signal, and each hybridized reference DNA has a fluorescent reference signal;
- c) calculating a ratio of said fluorescent target signal to said fluorescent reference signal at each array element, thereby determining the species of said test bacteria.

10. (Original) The method of claim 9, wherein said test bacteria are from a sample obtained from a subject.

11. (Previously Presented) The method of claim 10, wherein said test bacteria are pathogenic.

12. (Original) The method of claim 9, wherein said test bacteria are environmental isolates.

13. (Original) The method of claim 9, further comprising the step of producing hybridization profiles of said test and reference bacteria.

14. (Currently Amended) The method of claim 27 [[9]], wherein said calculating comprises statistical analysis.

15-21. (Canceled)

22. (New) The method of Claim 1, wherein said solid support comprises at least 60 arrayed elements.

23. (New) The method of Claim 1, wherein said solid support comprises at least 96 arrayed elements.

24. (New) The method of Claim 9, wherein said solid support comprises at least 60 arrayed elements.

25. (New) The method of Claim 9, wherein said solid support comprises at least 96 arrayed elements.

26. (New) The method of Claim 1, further comprising calculating a ratio of said fluorescent target signal to said fluorescent reference signal at each array element thereby determining the species of said test bacteria.

27. (New) The method of Claim 9, further comprising calculating a ratio of said fluorescent target signal to said fluorescent reference signal at each array element thereby determining the species of said test bacteria.